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ABSTRACT

The self-contained classroom tends to emphasize achievement of basic skills, while the open-concept school emphasizes attitudes and feelings. A brief historical review presents the history and explains the philosophy behind the open-concept school. This is followed by a review of the literature and an analysis of the present status of the concept. Also included in this bulletin is a brief summary of a study made to determine if there were basic differences between primary grade open-concept school students and primary grade traditional self-contained classroom students with regard to goal emphases of the two types of schools. (Author/MLF)

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Table of Contents

	Page
A Review of the Literature on the Open-Concept Elementary School	
Introduction	1
Historical Review	1
Philosophy	3
Review of Research	7
Observational Studies	7
Teacher Surveys	7
Student Comparisons	8
Summary of Research	10
Present Status	10
Conclusion	12
Bibliography	12
Appendix A	14
Appendix B	14
A comparison of Primary Grade Students in Open-Concept and Traditional Schools*	15
Introduction	15
Method	15
Results	16
Discussion	18
Conclusions	19
Bibliography	20

INTRODUCTION

The open-concept school is a controversial topic in American education today. Critics of the open-concept school claim that elementary school children will not learn the basic skills as well as in a traditional self-contained classroom because little time is designated for them. Proponents claim that the basic skills will be learned through the children's own interests, but that there are other major goals of the open-concept elementary school. A representative statement of its goals (Nyquist, 1971, p. 27) follows:

1. Happy children who feel successful and confident
2. Self-disciplined children who have wholesome attitudes toward life and learning
3. Independent thinkers who are self-propelled and continuing learners
4. Readers who are increasingly fluent and who enjoy reading
5. Children who write because they want to record and convey thoughts
6. Competent students who are able to cope with fundamental math, science, and social science concepts because these are necessary to answer important questions and to solve problems

While these goals may sound similar to the goals of the traditional self-contained classroom, the literature implies that there is a difference in emphases. The self-contained classroom tends to emphasize achievement of basic skills, while the open-concept school emphasizes attitudes and feelings.

HISTORICAL REVIEW

A brief historical review would now be appropriate to more fully explain the term, open-concept elementary school. The philosophy behind the open-concept school has evolved from a number of educators whose thoughts and writings have spanned many years. A summary of those philosophers' beliefs was stated by Andreae (1970, p. 12) as follows:

* This short report by Dr. Hopke has been appended because of its relevance to the general literature on the open-school concept.

1. Rousseau's assertion that education is living
2. Pestalozzi's belief in the child's capacity to learn for himself through living "according to nature"
3. Froebel's aim to "stir up, to animate and to strengthen the pleasure and power of the human being to labor uninterruptedly at his own education"
4. John Dewey's belief that learning results from doing and, therefore, to preserve the unity of the child's experience, the project method of learning should precede studying separate subjects
5. Maria Montessori's emphasis on the importance of the environment and the necessity for children to learn through their senses
6. Piaget's insight into the way children develop thinking skills

Influenced by those beliefs, the British Infant School, which serves children ages five to seven, has been undergoing recent curricular changes. Featherstone (1967) stated that according to the 1967 Plowden Report, the report of the Great Britain Central Advisory Council for Education, of which Lady Bridget Plowden was chairwoman, "one-third of the 23,000 primary schools" (p. 20) in Britain had been deeply influenced by a new curriculum, another third were in the transition stage and the remaining third were still using the traditional classroom approach. The curricular changes in the schools can be explained by the two terms, open classroom and family grouping. Gross (1970, p. 71) explains that the open classroom is based on the following four operating principles:

1. The room itself is decentralized, an open flexible space divided into functional areas, rather than one fixed homogeneous unit.
2. The children are free for much of the time to explore this room, individually or in groups, and to choose their own activities
3. The environment is rich in learning resources, including plenty of concrete materials, as well as books and other media
4. The teacher and her aides work most of the time with individual children or two or three, hardly ever presenting the same material to the classroom as a whole

Family grouping refers to the role of the school as an extension of the home by trying to make each class similar to a large family. Children are not put in separate classrooms according to age, nor are they homogeneously grouped according to ability. Each classroom consists of various ages — fives, sixes and sevens — and various ranges of abilities.

Attention was drawn to the changes in many of the British Infant Schools in 1967 by Joseph Featherstone. After a visit to England, he wrote a series of articles for *The New Republic* about such changes. American educators took notice, began visiting the British schools, and the American open concept elementary school had its beginning.

There have been many variations of the British model in America. To some American educators, the open concept school refers to a school without interior partitions where many classes are combined and a variety of teaching techniques may be used. To others it may refer to the expansion of the school to include community facilities. Even the terminology concerning the open concept school is not uniform. The open classroom, informal education, open education or integrated day are just a few of its titles.

The major work in the area of defining the open concept school has been done by Walberg and Thomas (1971, pp. 10-15). They reviewed the works of twenty-eight authors, identified eight major themes regarding the teacher's role in the open concept elementary school. They are as follows:

1. **Instruction.** The Open Education teacher shows a very high degree of individualized instruction and interaction and does not operate as the focal point of the classroom. Along with the guiding principle of providing for significant choice, her instruction is characterized by spontaneity, responsiveness, and adaptability; much of her instructional time is devoted to listening and observing with a great deal of less formal questioning and informing than is usually found in classrooms.
2. **Provisioning.** This refers to the teacher's responsibility for what is in the classroom and how it affects the children's learning. Under this theme come not only materials, equipment and furniture which the teacher chooses and arranges, but also the procedures and expectations she establishes. This theme is central to an educational philosophy that stresses the importance of choice for children. When to provide: The teacher supplies a child with a book or a piece of equipment or material

at a point when she estimates as a result of watching and talking with him, that it will further stimulate his inquiry.

3. **Diagnosis.** This refers to the teacher's involvement as a sensitive on-looker or participating observer. Diagnosis determines instruction — the way the teacher guides and extends the children's learning. The teacher cannot plan lesson plans for a week or month ahead of time. She must elicit information about the development of her children from day to day and respond to them individually on the basis of what she learns.

4. **Evaluation.** Evaluation has two purposes: its usefulness to the student and to the teacher in attempting to help the student. It is not to compare a child's performance with goals or norms in order to report his strengths and deficiencies to parents. It is a means of providing a child and those interested in his development with information about his growth and learning. The purpose of this information is to assist him in seeking better ways to choose what he wants to do and who he wants to be. and to help him gain the skills necessary to reach his goals. The teacher's recordkeeping combines her constant jotting in class and her thoughtful writing about each child outside of class time.

5. **Humaneness.** This is respect for the individual, honesty and warmth. The teacher shows her respect for the child by dealing honestly with him, presenting herself openly as a human being who has weaknesses and strengths and who recognizes that the other person is similarly human. Ideally, the classroom is a place of trust and openness, where interpersonal defensiveness has nearly disappeared, where expression of feeling is encouraged by others and accepted by the group.

6. **Seeking.** This is the teacher's recognizing opportunities to promote personal growth and making use of them. It can be part of teacher's interaction with children as well as her life outside the classroom (workshops, use of advisors, conversations, pursuit of information). Open Education is an approach to teaching which stresses the necessity of the teacher's deep and active personal involvement in classroom change and growth.

7. **Self-Perception.** This is the way the Open Education teacher views herself and her own role. Who she is and who she is becoming enables her to formulate and act upon her convictions about children and education.

8. **Assumptions.** These are beliefs which characterize the teacher's orientation towards children, knowledge, and the process of learning. Includes faith in children's innate curiosity, in their ability to sustain exploratory behavior, and in their capacity and right to make significant decisions about their learning.

Walberg and Thomas next developed a classroom observation instrument and corresponding teacher questionnaire for the measurement of the eight major themes. A 1971 study by the authors in Great Britain and the United States validated their instruments.

For the purpose of this paper, therefore, the *open-concept elementary school* will be defined as follows:

1. A school which may incorporate open space, having several classrooms contained in one open area

2. A school which incorporates the operating principles of the open classroom and family grouping based on the British Infant School model

3. A school which incorporates the eight major themes of open education as evidenced by scores on Walberg and Thomas' classroom observation instrument and teacher questionnaire, sample items from which are included in Appendices A and B

PHILOSOPHY

Much of the current literature about the open-concept elementary school deals with its theory or philosophy. One of the foremost writers in this area is Roland S. Barth. After surveying many educators — British primary teachers and headmasters, as well as American proponents of open education — Barth (1972, pp. 17-58) found strong agreement on the following assumptions about children, learning and knowledge:

Motivation

Assumption 1: Children are innately curious and will explore their environment without adult intervention.

Assumption 2: Exploratory behavior is self-perpetuating.

Conditions for Learning

Assumption 3: The child will display natural exploratory behavior if he is not threatened.

Assumption 4: Confidence in self is highly related to capacity for learning and for making important choices affecting one's learning.

Assumption 5: Active exploration in a rich environment, offering a wide array of manipulative materials, will facilitate children's learning.

Assumption 6: Play is not distinguished from work as the predominant mode of learning in early childhood.

Assumption 7: Children have both the competence and the right to make significant decisions concerning their own learning.

Assumption 8: Children will be likely to learn if they are given considerable choice in the selection of the materials they wish to work with and in the choice of questions they wish to pursue with respect to those materials.

Assumption 9: Given the opportunity, children will choose to engage in activities that will be of high interest to them.

Assumption 10: If a child is fully involved in and is having fun with an activity, learning is taking place.

Assumption 11: When two or more children are interested in exploring the same problem or the same materials, they will often choose to collaborate in some way.

Assumption 12: When a child learns something that is important to him, he will wish to share it with others.

Intellectual Development

Assumption 13: Concept formation proceeds very slowly.

Assumption 14: Children learn and develop intellectually not only at their own rate but in their own style.

Assumption 15: Children pass through similar stages of intellectual development, each in his own way and at his own rate and in his own time.

Assumption 16: Intellectual growth and development take place through a sequence of concrete experiences followed by abstractions.

Assumption 17: Verbal abstractions should follow direct experience with objects and ideas, not precede them or substitute for them.

Evaluation

Assumption 18: The preferred source of verification for a child's solution to a problem comes through the materials he is working with.

Assumption 19: Errors are necessarily a part of the learning process; they are to be expected and even desired, for they contain information essential for further learning.

Assumption 20: Those qualities of a person's learning that can be carefully measured are not necessarily the most important.

Assumption 21: Objective measures of performance may have a negative effect on learning.

Assumption 22: Learning is best assessed intuitively, by direct observation.

Assumption 23: The best way of evaluating the effect of the school experience on the child is to observe him over a long period of time.

Assumption 24: The best measure of a child's work is his work.

Assumptions About Knowledge

Assumption 25: The quality of being is more important than the quality of knowing; knowledge is a means of education, not its end. The final test of an education is what a man is, not what he knows.

Assumption 26: Knowledge is a function of one's personal integration of experience and therefore does not fall into neatly separate categories or "disciplines."

Assumption 27: The structure of knowledge is personal and idiosyncratic; it is a function of the synthesis of each individual's experience with the world.

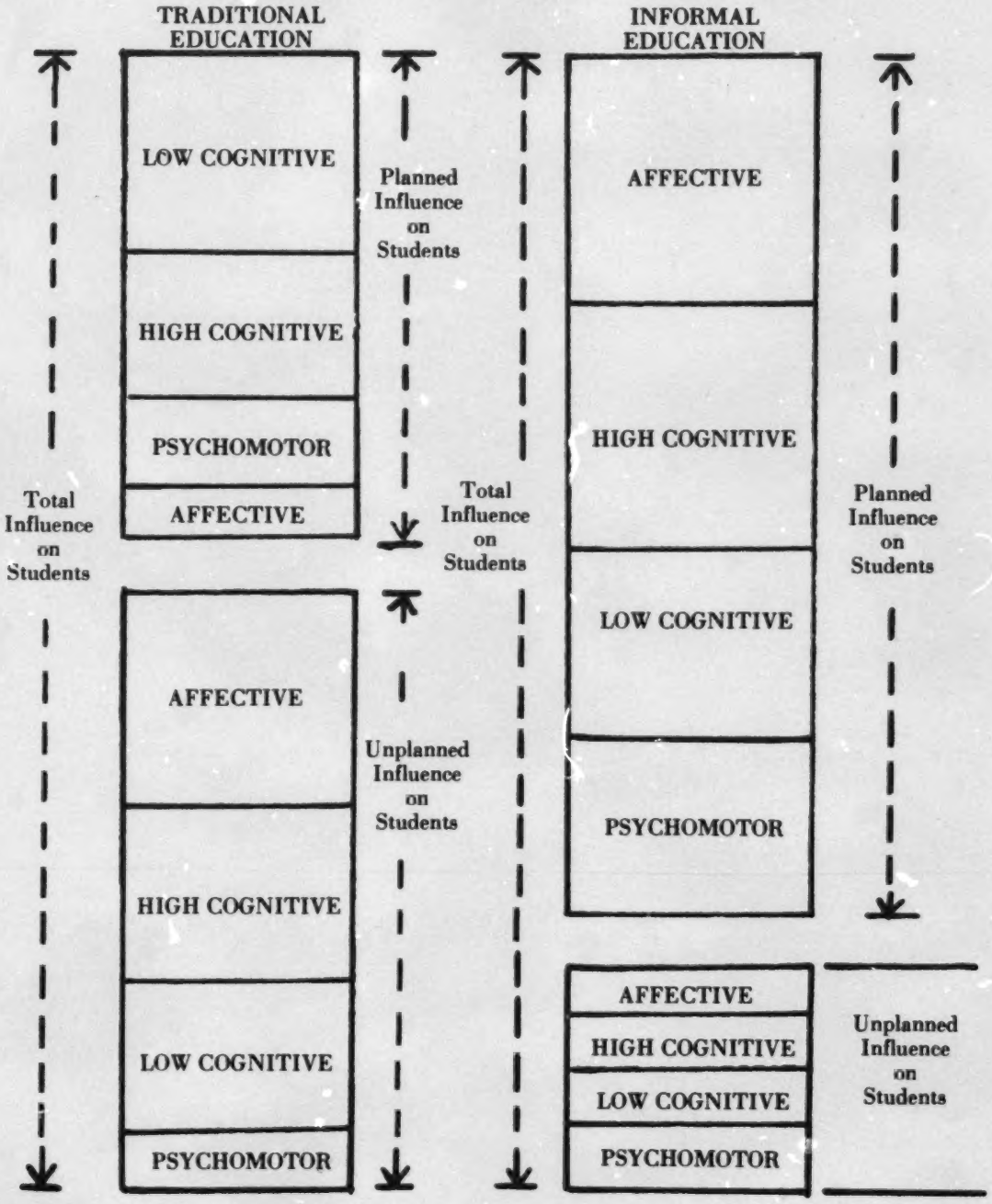
Assumption 28: Litle or no knowledge exists that is essential for everyone to acquire.

Assumption 29: It is possible, even likely, that an individual may learn and possess knowledge of a phenomenon and yet be unable to display it publicly. Knowledge resides with the knower, not in its public expression.

Several writers have chosen to theoretically contrast the open-concept school with the traditional school. David T. Miles has made a comparison between informal and traditional education in terms of priorities of objectives using the behavioral domains and taxonomy classification of educational objectives from Bloom and Krathwohl. Miles theorizes that in most traditional schools affective outcomes receive little planning, while in most informal schools such affective goals as self-concept, self-directedness, curiosity, resourcefulness, creativity, responsibility and sensitivity are placed in highest priority. While

traditional schools place more emphasis on low level cognitive outcomes, such as the acquisition of knowledge, informal schools devote considerable emphasis on high level cognitive skills — such as learning to learn, problem solving, critical thinking, and social and communication skills. Figure 1 (Miles, 1972, p. 33) shows his comparison graphically.

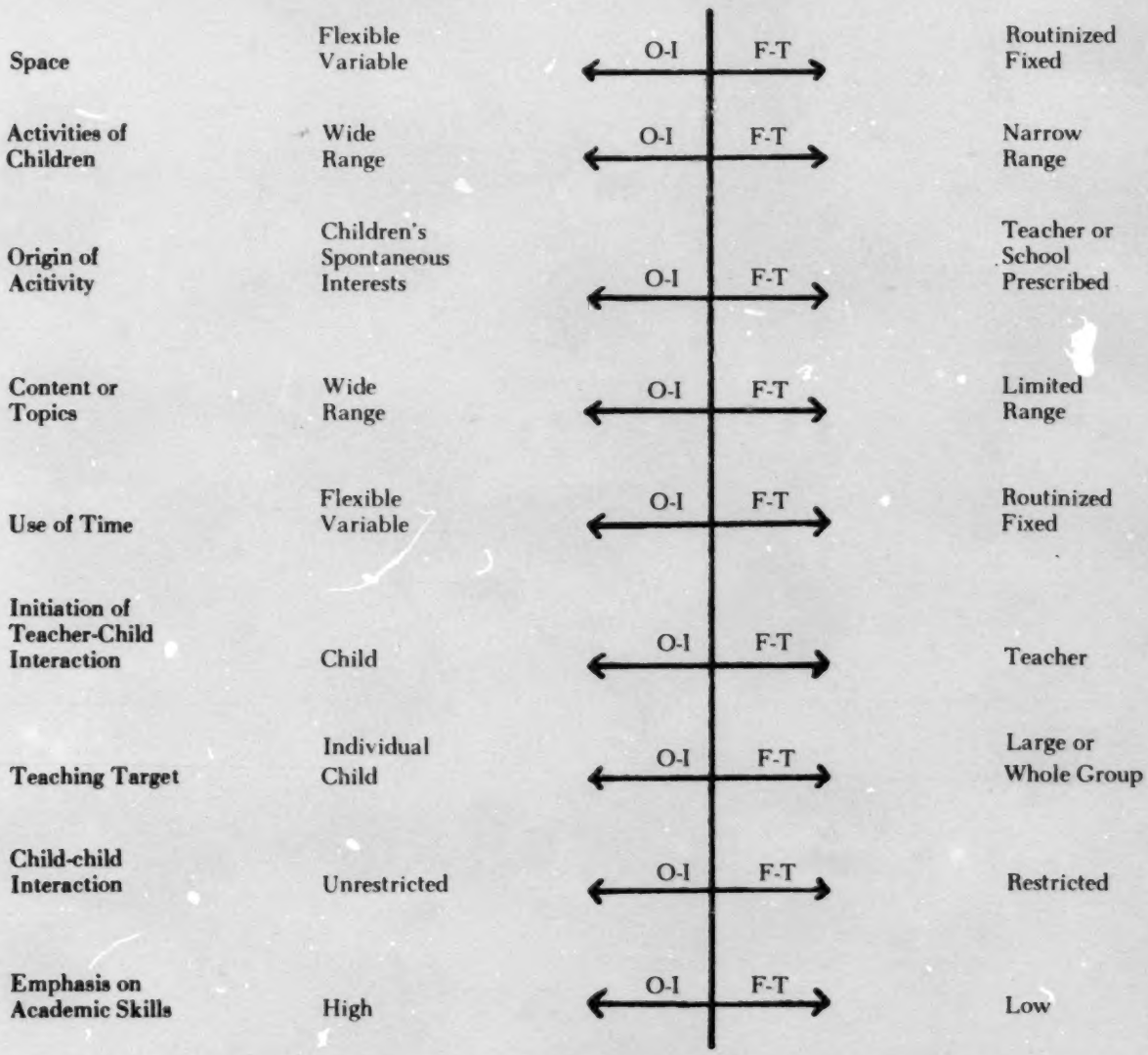
Figure 1
Comparison Between Traditional and Informal Education



Another well-known writer in this area is Lilian G. Katz. She has also contrasted open-informal classes with formal-traditional classes on several dimensions. Figure 2 (Katz, 1971, p. 9) illustrates her comparisons and the following statement (Katz, 1972, p. 10) gives open education her endorsement:

> The strongest reason to support open education is the assumption that classroom activities derived largely from the spontaneous natural interests of the pupils themselves are more likely to result in positive attitudes toward school and learning than are classroom activities which are prespecified, independent of the children to be served.

Figure 2
The Position of Open-Informal and Traditional-Formal Classes on Selected Dimensions of Classroom Life



O-I = Open-Informal Classes; F-T = Formal-Traditional Classes

REVIEW OF RESEARCH

The majority of research studies done in this area deal with open space schools, defined as those which have few or no permanent interior classroom partitions. Various research methods have been used, including observations, teacher surveys, and comparisons of students.

Observational Studies

One study done by Kuzar (1971) compared instructional practices and problems in open plan classrooms with practices and problems in conventional plan school buildings. One secondary and three elementary schools having open plan classrooms were each paired with a comparable school having conventional classrooms. The Sanders observation instrument was used to record teaching techniques, psychological climate, social organization, order maintaining techniques, provision for individual differences and activities utilized in the instructional program. A survey was also conducted in each of the schools to determine the amount of noise transmitted between instructional areas or rooms, and sound level recordings were taken during instructional periods to ascertain actual classroom noise levels.

Analysis of the data indicated some significant differences in the interaction of open plan and conventional plan schools, but no discernible trends in the instructional program were evident. The overall noise levels in open plan and conventional plan schools were no different.

An observational study done by the York County Board of Education in Ontario (1970) compared behavior outcomes for students in four open plan schools with students in three control schools. Students were randomly selected and observed as unobtrusively as possible during one school day by members of the observation team of seven principals and two master teachers. Observation results indicated a trend for these behaviors to be more readily observable in open plan schools than in the control schools:

- Pupils initiate activities that reflect their personal interests and these activities are given a chance to flourish in the day's activities:
- Pupils make (generally) good use of opportunities to display personal responsibility;
- Cooperative-planning (teacher-teacher), (teacher-pupil) takes place, and
- Pupils demonstrate the spirit of inquiry by raising pertinent questions.

Teacher Surveys

A survey of teachers' opinions (Pritchard & Moodie) was done in 1971. Ninety-three teachers in British Columbia presently teaching in open space schools and sixteen former open space school teachers were surveyed. The survey revealed that the majority of the teachers supported the concept of open space for the majority of the pupils. However, the teachers did indicate needs for modifications in teacher training, better classroom equipment and more lesson preparation time.

A study done in the Calgary Public School Systems (Carson, Johnson & Oliva, 1973) compared teachers in open area schools, quasi-open area schools (ones built on a self-contained classroom basis but with open area additions), and traditional schools on instructional objectives and impediments to achieving those objectives. The comparison was made on the basis of a questionnaire administered to two hundred twelve teachers from fourteen schools.

Of the thirteen teachers' objectives listed, open area teachers' scores were significantly higher than traditional teachers' scores on the following objectives: (a) enriching the course of study for your students, (b) giving individual attention to students, (c) developing the aesthetic potential of students, and (d) helping students develop a good system of values. Open area teachers' scores were also significantly higher than quasi-open area teachers' scores on the following objectives: (a) giving individual attention to students and (b) helping students develop a good system of values. Finally, quasi-open area teachers' scores were significantly higher than traditional teachers' scores on the objective, developing the aesthetic potential of students.

Of the eleven instructional impediments listed, open area teachers' scores were significantly higher than traditional teachers' scores on the following impediments: (a) lack of physical facilities and space, (b) difficulty or complexity of the objectives themselves, (c) reactions or expectations of parents and (d) lack of resources. The researchers stated some of these findings were possibly due to physical differences between the buildings. The open area buildings were newer and, therefore, not yet as well equipped as the traditional buildings. In addition, the traditional buildings had an excess of space, caused by declining

enrollments, while the open area buildings were more crowded.

Other findings showed open area teachers' scores to be significantly higher than quasi-open area teachers' scores on the following impediments: (a) conflict with other duties and objectives, (b) lack of physical facilities and space, and (c) reactions or expectations of your students. Finally, quasi-open area teachers' scores were significantly higher than traditional teachers' scores on the following impediments: (a) reactions or expectations of your principal and (b) conflict with other duties and objectives.

More research on the open space school has been done by the School Environmental Study, a project of the California School Planning Lab at Stanford University. The Lab has done a series of studies on open space elementary and secondary schools. A representative elementary study (Brunetti, 1971) was a survey done in two elementary schools, one open space and one conventional. The teachers rated a random sample of students on nine learning traits, five academic and four social-emotional, in February, when the open school opened, and again in June. The children in the open space school were rated lower than those in the conventional school in February, but higher in June on the social-emotional traits of peer relations, adult relations, independence and emotional maturity. A replication of the study the following year revealed significant growth in seven of the nine learning traits for the open space school children as compared to only two traits for the conventional school children.

Student Comparisons

Recent comparative studies have been done which consider the variables of student achievement, self-concept and others. Three studies were reported in the literature which compared achievement, three which compared self-concept, and several which compared other variables.

Burnham's reports (1971 and 1972) were of first and second years' findings of a longitudinal three-year study of achievement differences between students in new open plan schools and those in existing conventional architecture schools in Aurora, Ontario. An IQ test, the Canadian Cognitive Abilities Test, and the Metropolitan Achievement Test were given to first graders in two open plan schools and nine conventional schools and to the same students in second grade the following year. No significant differences were found in any of the first grade findings, although the marginal differences tended to favor the open plan schools. The second grade findings were very similar. Average scores on IQ and achievement tests were not signficantly different, although marginal differences existed in reading and spelling in favor of open plan students.

While Burnham's reports provided his study's first and second years' findings, Killough's report (1971) provided the final results of a three-year longitudinal study done in Houston, Texas. Experimental subjects were twenty-two boys and sixty-two girls enrolled in a nongraded open plan school and control subjects were sixty-eight boys and sixty-seven girls enrolled in a traditional elementary school. The subjects were randomly selected from four elementary schools, administered pre-tests at the onset of the study and administered post-tests after each of the three years of the study. The significant effects of the study indicated that after at least two years in the nongraded open space elementary school program, pupils had made significantly better achievement gains in most cognitive areas than had their control counterparts. These effects continued during the third year.

While one of the above studies showed significant results with regard to achievement and the others did not, the comparative studies of self-concept have also found mixed results. Ruedi and West's study (1973) compared the self-concepts of fourth, fifth and sixth grade children as measured by Gordon's "How I See Myself" instrument. Twenty-four pairs of students were matched according to grade level and Stanford Achievement Word Meaning Scores. The hypothesis that students in the open school would be higher in overall self-concept and several of its factors was not supported. Only one out of twenty factors, Teacher-School, was significantly higher in open school students, although sixteen were in the predicted direction.

Another study comparing the self-concepts of open and traditional students was reported by Kohler (1973). The Sears Self-Concept Inventory was administered to three hundred sixteen students, ages nine to twelve, from six suburban elementary schools. No significant difference in any of the six areas of self-concept measured by the instrument was found between students in the open and students in the traditional schools. Significantly higher self-concepts were found between males in open schools versus males in traditional schools, between males versus

females in open schools, and between different open schools. No correlations were found between the school's degree of openness, as measured by the Walberg-Thomas Scales, and the students' self-concepts.

While the two previous studies focused on intermediate grade students, Heimgartner's study (1972) focused on kindergarten through grade three children. The chief purpose of his study was to determine whether any change occurred in the self-concept of children in the open-space environment as compared to any change of self-concept of children in a self-contained environment. The subjects were given the Self-Social Symbols Tasks and the Children's Self-Social Constructs Tests in October and again in the spring. The following conclusions were drawn:

1. Children in open space have greater identification with the group than the children in self-contained classrooms.
2. Children in open space had an increase in self-esteem while children in self-contained classrooms demonstrated a loss.
3. Children in open space do not view themselves differently in the relationship of their size to that of an adult.
4. Children in open space do not identify with any particular teacher.

Three studies were reported in the literature which compared students on several variables. Wilson, Langevin and Stuckey (1972) compared fifth and sixth grade pupils in two open plan schools to fifth and sixth grade pupils from two traditional schools. Attitudes toward school, teacher, self, learning and school last year were measured using a semantic differential. Pupils were also compared on measures of curiosity and productive thinking. It was found that open plan pupils had more positive attitudes toward school and themselves, but there were fewer differences in the other variables. There were no signficant differences in measures of curiosity, but differences in productive thinking occurred. Pupils who spent considerable time in an open plan school scored higher on some measures of productive thinking while pupils in a newer open plan school scored consistently less than a control group.

A more recent study done by the York County Board of Education in Ontario (1973) compared curiosity and creativity of pupils in open plan and architecturally conventional schools. Two open plan elementary schools were chosen together with two traditional schools that closely matched in size, location and socioeconomic backgrounds of pupils. The Torrance Tests of Creativity, Haywood Motivational Preference Inventory and Day Test of Specific Curiosity were given to students in grades two and five. The results showed that some differences existed between the schools, but the differences were not systematic and did not point to any real distictions among the schools.

A more comprehensive, experimental study (Tuckman, Cochran & Travers, 1973) involved a Title III open classroom project in grades one through three in one school and grades one through five in another. The Project Open Concept teachers took a three-week trip to England to study the British Infant School, a summer workshop, consultant visitations during the year, in-service workshops and classroom visitations and consultation with the Project Open Concept staff. Classrooms were observed twice during April and May for at least twenty minutes by two trained observers. Tests given to the students were the Classification Task, The Self- Appraisal Inventory, The School Sentiment Index and the California Achievement Test. Open classroom teachers were found to be more flexible in their use of space and organization of classroom activities, more creative, more warm and accepting. Pupils did not differ on achievement or on problem solving, as measured by the Classification Task; but the open pupils had more positive self-apraisals and attitudes toward school than the control children.

Another study done in British Columbia (Myers, 1971) compared students' perceptions of the roles of their teachers and themselves in two different situations. The Torrance and Myers Ideal Teacher Checklist was administered to students in grades three through seven in self-contained classrooms and to students in grades five through seven in an open area school. While the authors claimed that the data indicated that students in the open area school were less concerned about discipline, more autonomous and less concerned about fair treatment than the students in self-contained classrooms, several inconsistencies in the study weakened its results.

Another study reported in the literature (Bleier, Groveman, Kuntz & Mueller, 1972) compared eighteen third grade students in a traditional classroom and eighteen third grade students in an open classroom on how easily they would yield to influence. A test of common knowledge was given to the two comparable classes with responses already penciled

into the test booklets. It was hypothesized that on difficult items open class students would give fewer responses conforming to the wrong penciled-in ones than would the traditional class students. The data clearly supported the hypothesis; and the authors conclude that because the open class children were more likely to follow their own hunches rather than adopt the already penciled-in response, these children appeared to have more confidence in their own ability to do a difficult task than did the traditional class children.

Summary of Research

In summation, research studies on the open concept school are still minimal at this time. With regard to the observational studies, Kuzar reported no discernible differences between the buildings in terms of teaching techniques, the instructional program, psychological climate, social organization, order maintaining techniques, or noise level. The York County Board of Education's study found that more cooperative planning took place in the open plan schools and that students in the open plan schools initiated more activities, displayed more personal responsibility and raised more pertinent questions than those in control schools.

With regard to the teachers' surveys, Pritchard and Moodie's survey revealed that the majority of teachers supported the concept of open space. The study done in the Calgary Public School Systems found several significant differences between open area teachers, quasi-open area teachers and traditional teachers with regard to instructional objectives and impediments to achieving objectives. In Brunetti's study teachers rated open space school children differently than conventional children on academic and social-emotional traits.

With regard to student comparisons, three studies compared student achievement. Killough's study showed significant results in favor of open students while both of Burnham's reports did not.

Of the three comparisons on self-concept, Ruedi and West found open students to be significantly higher in only one of twenty factors, while Kohler found no significant differences between open and traditional school students. Heimgartner did find some significant differences in favor of open children in his study of self-concept.

Of the studies which compared several variables, Wilson, Langevin and Stuckey found open plan students had more positive attitudes toward school and themselves, but there were few differences in measures of curiosity and productive thinking. The York County Board of Education study showed no systematic differences between students on measures of curiosity and creativity. Tuckman, Cochran and Travers' study showed open pupils had more positive self-appraisals and attitudes toward school than control children, but they did not differ on achievement or no problem solving. The open classroom teachers were found to be more flexible in their use of space and organization of classroom activities, more creative, more warm and accepting.

Two other studies were the Myers study done in British Columbia and the Bleier, Groveman, Kuntz & Mueller study. The Myers study indicated that students in the open area school were less concerned about discipline, more autonomous and less concerned about fair treatment than the students in self-contained classrooms. The second study showed that traditional students yielded to influence more easily than open classroom students.

From the previous reviews, one may observe that research on the open concept school is plagued with weaknesses. A major weakness of most of the studies is a lack of definition of the open school. Most have merely defined it as an open space school with little description of the instructional practices. Small sample sizes and the testing of only a single variable have seriously hampered the usefulness of some of the studies. Some studies report no differences between open and traditional schools and students or only trends in favor of the open concept school while a few report statistical significance.

PRESENT STATUS

While there is not yet a uniform definition of the open concept school in the literature nor a firm research base upon which to judge its effectiveness, the open concept school continues to grow in popularity in the United States. The Ford Foundation has announced grants (Adapting British School Reforms, 1970) "totaling $220,000 to four projects aimed at helping American public schools adapt for their own use those aspects of British primary school reform that are applicable in the U.S. (p. 16)."

In the Midwest, the North Dakota State Department of Public Instruction has adopted the open classroom officially in its public school system. The Center for Teaching and Learning at the University of North

Dakota specializes in training personnel to work in open schools.

In the East, Vermont began taking steps to introduce open education soon after the Plowden Report appeared in 1967. Vermont's Department of Education worked with groups of citizens and educators throughout the state to develop basic principles for a program of statewide improvement of the schools. The resulting objectives, representing fundamental tenets of open education, were issued in 1968 as the core of the Vermont Design for Education.

Another Eastern state seems to be moving in the direction of open education. New York's commissioner of education, the chancellor of New York City schools and the president of the state branch of the American Federation of Teachers (Barth, 1971) "have all expressed their intent to make the state's classrooms open classrooms (p. 97)."

The City College TTT program, Trainers of Teacher Trainers, under the City University of New York, adopted the open classroom model as a vehicle for developing an undergraduate program, for in-service training of classroom teachers and educational auxiliaries, and for improving the teaching strategies and skills of college faculty. As a result of the success of the program, City College is revamping the direction of its undergraduate teacher education program toward open education and has already adopted a new graduate-degree program (Windley, 1972), "The Child and the Individualized Curriculum (p. 10)," a program supportive of the philosophy and structure of the open classroom approach to teaching and learning.

The much publicized Open Door Program in New York City (Thackray, 1970) was also based on the British model. After visiting several Infant Schools in England, Professor Lillian Weber at the City College of New York designed the program. Classrooms from pre-school through second grade opening onto a joint corridor make a small school within a larger school. By opening the doors, enriching equipment in the classrooms and the corridor and encouraging movement through the corridor and between the classrooms, a continuous program for each child is to be provided.

On the Federal level, one of the project Follow Through programs is the Education Development Center model based on the British Infant School model. The emphasis of the model is on self-development, and each class is encouraged to develop its own personality by being responsive to the needs and interests of the children and the talents and style of the teacher. A fundamental aim is for children to assume responsibility for their own learning. In rich environments, materials are present for exploration, and the children are encouraged to initiate activities, be self-directing and become intensely involved in their interests. The teacher is seen as a facilitator or guide whose objective is to get the children involved in things that are relevant to them. An important component of the EDC approach is an advisory team, whose task is to help school systems put this philosophy of education into practice.

Another Follow Through program based on the British model is the Tucson Early Education Model, now in effect at Tucson, Arizona. The attributes of the program are as follows (Henderson, 1971, pp. 2-3):

> . . . process rather than a product orientation, provision for self-selection of activities on the part of the children; attempts to deal with skills and knowledge in an integrated or orchestrated way (in contrast to the compartmentalization of academic "subjects" which is typical in most curricula); the random or heterogeneous grouping of children, intended to make it possible for the children to learn from one another (in contrast to tracking or other forms of ability grouping); and a style of teacher behavior which enables the teacher to respond to the behavioral cues presented by individual children and to use these cues as a basis for building on or extending what a child already knows, what he can already do, and what he is interested in.

In New Hampshire, Project SOLVE, Support for Open-Concept Learning Areas through Varied Educational teams, a consortium of six open concept elementary schools, has been federally funded under Title III. The purpose of the consortium has been for retraining staff and sharing cumulative knowledge. The following areas are emphasized (Wing & Mack, 1970, p. 15):

> . . . team teaching, flexible grouping, independent study programs, tutorial instruction (children being tutored by teachers or by other students), prescriptive techniques, continuous diagnostic testing, and multimedia experience (learning through touching, seeing, hearing)

On the West coast, the Open-Space Schools Project began in 1965. Beginning with a group of principals representing a Bay Area consortium of open space

schools and funded by a grant from Educational Facilities Laboratories, the project engages in research related to the following purposes (Open Space School Project, 1970, p. 1):

1. Establishing a common frame of reference for future research and development;
2. Helping educators, planners, architects, and others make decisions related to school development and operation; and
3. Designing solution strategies for common problems.

CONCLUSION

In conclusion, the open-concept elementary school, based on the British model, appears to be a topic of interest in American education today. The literature is deluged with articles describing the philosophy behind said school and describing new open concept schools in many states all across the nation.

Research on the effectiveness of the open-concept school is still minimal at this time. Whether the open-concept school will survive or whether it will die, as did the ill-fated Progressive Education Movement of the past, will depend on future research.

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APPENDIX A

OBSERVATION RATING SCALE SAMPLE ITEMS

	no evidence	weak, infrequent	moderate, occasional	strong, frequent evidence
1. Tests and materials are supplied in class sets so that all children may have their own.	1	2	3	4
7. Day is divided into large blocks of time within which children, with the teacher's help, determine their own routine.	1	2	3	4
10. Children are not supposed to move about the room without asking permission.	1	2	3	4
16. Children use "books" written by their classmates as part of their reading and reference materials.	1	2	3	4
19. The environment includes materials developed or supplied by the children.	1	2	3	4
28. Teachers bases her instruction on each individual child and his interaction with materials and equipment.	1	2	3	4
33. To obtain diagnostic information, the teacher closely observes the specific work or concern of a child and asks immediate, experience-based questions.	1	2	3	4
36. Teacher has children for a period of just one year.	1	2	3	4
44. Teacher uses the assistance of someone in a supportive advisors capacity.	1	2	3	4
45. Teacher tries to keep all children within her sight so that she can make sure they are doing what they are supposed to do.	1	2	3	4
48. Teacher views evaluation as information to guide her instruction and provisioning for the classroom.	1	2	3	4
49. Academic achievement is the teacher's top priority for the children.	1	2	3	4
50. Children are deeply involved in what they are doing.	1	2	3	4

APPENDIX B

TEACHER QUESTIONNAIRE SAMPLE ITEMS

Instructions: For each of the following statements circle the number which most closely expresses your estimate of the extent to which the statement is true of your own classroom. If the statement is absolutely not the case, circle "1"; if it is very minimally true, choose "2"; if the statement generally describes your classroom, choose "3"; if it is absolutely true, choose "4

	strongly disagree	disagree	agree	strongly agree
1. Texts and materials are supplied in class sets so that all children may have their own.	1	2	3	4
7. Day is divided into large blocks of time within which children, with the teacher's help, determine their own routine.	1	2	3	3
10. Children are not supposed to move about the room without asking permission.	1	2	3	4
16. Children use "books" written by their classmates as part of their reading and reference materials.	1	2	3	4
19. The environment includes materials developed or supplied by the children.	1	2	3	4
28. I base my instruction on each individual child and his interaction with materials and equipment.	1	2	3	4
33. To obtain diagnostic information, I closely observe the specific work or concern of a child and ask immediate, experience-based questions.	1	2	3	4
36. I have children for a period of just one year.	1	2	3	4

A Comparison of Primary Grade Students in Open-Concept and Traditional Schools

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INTRODUCTION

The purpose of this study was to determine if there were basic differences between primary grade open-concept school students and primary grade traditional self-contained classroom students with regard to goal emphases of the two types of schools. Since the self-contained classroom emphasizes achievement of basic skills and the open concept school emphasizes attitudes and feelings, the following research hypotheses were proposed:

1. Primary students in traditional self-contained classrooms will achieve higher levels of basic skills than primary open concept school students.
2. Primary open concept school students will have a more positive attitude toward school than primary traditional self-contained classroom students.
3. Primary open concept school students will have a more positive academic self-concept than primary traditional self-contained classroom students.
4. Primary open concept school students will have a more positive global self-concept than primary traditional self-contained classroom students.

Definitional criteria were set which the two research schools were required to meet in order to qualify for the study. The open-concept school was defined as follows:

1. A school which incorporates open space, having several classrooms contained in one open area
2. A school which incorporates the operating principles of the open classroom and family grouping based on the British Infant School model
3. A school which incorporates the eight major themes of open education as evidenced by scores on Walberg and Thomas' classroom observation instrument and teacher questionnaire

The traditional self-contained classroom was defined as follows:

1. A classroom with walls containing a group of approximately twenty-five to thirty children at one grade level
2. The classroom teacher prescribes learning activities for the children for each subject area
3. Instruction is typically for the total group or for smaller groups based on children's ability levels
4. Scores on Walberg and Thomas' classroom observation instrument and teacher questionnaire identify the characteristics of the classroom as traditional

METHOD

Two research schools were chosen from a suburban Seattle public school district. The schools were comparable with regard to building enrollment, age, racial compositon and socioeconomic area. Some differences in teachers' characteristics were noted. Generally, the teachers in the open school were characterized as being younger, having less years of teaching experience, and having more advanced educational degrees than the teachers in the traditional school. There were three male teachers in the open school compared to none in the traditional school.

A simultaneous full-day observation was made in each primary classroom of the traditional school and in each pod of the open concept school by two trained observers using Walberg and Thomas' *Observation Rating Scale*. In addition, each teacher who worked with primary children completed the corresponding *Teacher Questionnaire*. Reliability between observers'

scores was .99, significant at the .001 level. Reliability between observers' average observation scores and teachers' questionnaire scores was .89, again significant at the .001 level. Based on classroom observations and teacher questionnaires, it was determined that the open concept school and the traditional school met the definitional criteria.

The subjects were 140 first, second and third graders who had attended the research schools since kindergarten. Sixty-five were from the open-concept school and 75 were from the traditional school.

Over a six-week period from late February to early April, four tests were administered to the students by the researcher. The *Iowa Test of Basic Skills* measured achievement, producing a composite grade level score for each subject as well as the following subtest grade level scores: vocabulary, reading comprehension, language skills, work-study skills and mathematics skills. The *School Sentiment Index* measured attitude toward school, producing a total score as well as the following subtest scores: teacher, school subjects, social structure and climate, peer and general. The *Self-Concept and Motivation Inventory* measured academic self-concept, producing a total score as well as two subtest scores, role expectations and self adequacy. The *Self Appraisal Inventory* measured global self-concept, producing a total score as well as the following subtest scores: general, peer, school and family.

A 2 x 2 x 3 factorial design was basically employed. Two levels of the variables, type of school and sex, were examined as well as three grade levels. Analysis of variance with an alpha level of .05 was used to determine significance of effects or interactions.

RESULTS

Analysis of the data on achievement produced different findings at different grade levels. Table I summarizes the data.

TABLE I

Summary of Achievement Data: Subtest and Composite Grade Level Mean Scores

Grade One

	Open		Traditional	
Subtest	Boys n = 12	Girls n = 9	Boys n = 6	Girls n = 16
Listening	2.1	1.5	2.0	1.9
Word Analysis	1.8	1.8	2.0	2.4
Vocabulary	2.0	1.7	1.7	2.3
Reading	2.4	1.9	2.0	2.6
Language Skills	1.9	1.8	2.0	2.3
Work-Study Skills	2.0	1.6	1.7	2.1
Mathematics	2.2	2.0	2.0	2.3
Composite	2.0	1.8	1.9	2.2

Grade Two

	Open		Traditional	
Subtest	Boys n = 10	Girls n = 11	Boys n = 10	Girls n = 10
Listening	2.7	3.3	3.3	2.9
Word Analysis	2.7	3.1	3.4	2.9
Vocabulary*	2.5	3.3	3.8	3.4
Reading	2.2	3.2	3.4	3.2
Language Skills	2.6	2.8	3.7	2.9
Work-Study Skills*	2.6	3.0	3.5	2.9
Mathematics	2.9	3.1	3.7	3.3
Composite*	2.6	3.1	3.5	3.1

Grade Three

	Open		Traditional	
Subtest	Boys n = 7	Girls n = 16	Boys n = 18	Girls n = 15
Vocabulary*	2.6	3.6	4.2	3.6
Reading	2.8	3.4	3.7	3.1
Language Skills	2.7	3.6	3.8	3.2
Work-Study Skills	2.7	3.7	3.8	3.4
Mathematics*	2.7	3.3	3.8	3.3
Composite	2.7	3.5	3.8	3.3

*Subtests on which traditional students scored significantly higher than open concept students.

No significant differences were found between first grade research groups in terms of the main effects, type of school and sex, or in terms of interactions. At the second grade level, traditional students scored significantly higher than open concept students on three of the seven subtests — vocabulary, language skills, and mathematics skills — as well as on the composite achievement scores. At the third grade level, traditional students significantly outscored open-concept students on two of the five subtests,

vocabulary and mathematics skills. In addition, several significant school x sex interactions were present in the second and third grade findings. The interaction pattern was consistent on two of the seven grade two subtests, listening and reading, and on three of the five grade three subtests — vocabulary, language skills and work-study skills — as well as on the grade three composite scores. Traditional boys outscored open concept boys while open-concept girls either averaged the same mean score or outscored traditional girls.

Analysis of the data on attitude toward school showed several significant differences between research groups. See Table II for a summary of the data.

TABLE II

Summary of Attitude Toward School Data: Subtest and Total Mean Scores

School	Sex	Grade	Teacher Subtest * ***	School Subjects Subtest **	Social Structure and Climate Subtest ***	Peer Subtest * ***	General Subtest ***	Total Scores ** ***
Open	Boys	1 (n = 12)	4.17	3.67	3.58	4.58	2.08	18.08
		2 (n = 10)	4.90	4.70	4.60	4.90	3.30	22.40
		3 (n = 7)	5.71	4.29	5.00	6.14	4.43	25.57
	Girls	1 (n = 9)	4.78	4.89	4.44	5.11	3.44	22.67
		2 (n = 11)	5.55	4.82	5.91	6.00	5.73	28.00
		3 (n = 16)	6.56	5.19	5.19	5.31	4.63	26.88
Trad.	Boys	1 (n = 6)	3.67	4.50	4.33	4.00	3.83	20.33
		2 (n = 10)	4.60	4.20	4.10	3.80	4.50	21.20
		3 (n = 18)	4.33	5.44	5.00	5.00	5.39	25.17
	Girls	1 (n = 16)	3.50	4.56	3.69	4.13	3.88	19.75
		2 (n = 10)	5.20	5.90	5.00	4.70	4.40	25.20
		3 (n = 15)	5.13	5.93	5.07	4.93	5.07	26.13

*Subtests on which open concept students scored significantly higher than trad. students.
**Subtests on which girls scored significantly higher than boys.
***Subtests on which grade three students scored the highest, grade two students scored the lower and grade one students scored the lowest.

In two of the five subtests on this instrument, attitudes toward teachers and peers, open-concept school students scored significantly higher than traditional school students. Girls generally exhibited more favorable attitudes toward school than boys with sex being a significant effect on the total test scores and on the school subjects subtest. Grade level differences were also significant with students' attitudes toward school consistently improving with higher grade levels. Grade one students had the lowest scores, grade two students had slightly higher scores and grade three students had the highest scores. No significant interactions were present.

Analysis of the data on academic self-concept produced no significant differences between research groups for either type of school or sex effects. Table III summarizes the data.

*Subtest on which grade students scored significantly higher than grade one students.

TABLE III

Summary of Academic Self-Concept Data: Subtest and Total Mean Scores

School	Sex	Grade	Role Expectations Subtest *	Self Adequacy Subtest	Total Scores
Open	Boys	1 (n = 12)	21.67	21.67	43.33
		2 (n = 10)	25.20	24.00	49.20
	Girls	1 (n = 9)	21.67	23.00	44.67
		2 (n = 11)	22.55	22.64	45.18
Trad.	Boys	1 (n = 6)	21.33	21.67	43.00
		2 (n = 10)	23.20	23.30	46.60
	Girls	1 (n = 16)	22.88	23.25	46.13
		2 (n = 10)	22.70	22.10	44.80
Open	Boys	3 (n = 7)	46.14	42.57	88.71
	Girls	3 (n = 16)	42.94	42.31	85.13
Trad.	Boys	3 (n = 18)	44.28	38.83	83.11
	Girls	3 (n = 15)	46.33	42.20	88.53

No significant differences were found on the total academic self-concept scores or on either of the subtest scores. One significant grade level difference was found on the role expectations subtest, favoring grade one over grade two students; and one significant grade x sex interaction was present on the total academic self-concept scores.

Analysis of the data on global self-concept showed significant differences between research groups in terms of all three main effects — school, sex and grade level. See Table IV for a summary of the data.

Table IV

Summary of Global Self-Concept Data: Subtest and Total Mean Scores

School	Sex	Grade	General Subtest	Peer Subtest **	School Subtest * **	Family Subtest * ***	Total Scores *
Open	Boys	1 (n = 12)	6.75	4.92	6.00	5.92	23.58
		2 (n = 10)	6.80	6.20	6.10	6.40	25.50
		3 (n = 7)	7.43	7.29	7.00	8.00	29.71
	Girls	1 (n = 9)	6.00	5.67	5.33	5.44	22.44
		2 (n = 11)	7.36	4.73	4.91	6.10	23.10
		3 (n = 16)	6.56	4.88	5.31	6.25	23.00
Trad.	Boys	1 (n = 6)	7.50	6.83	5.67	5.83	25.83
		2 (n = 10)	5.00	4.50	5.40	4.50	19.40
		3 (n = 18)	6.94	4.89	4.67	5.44	21.94
	Girls	1 (n = 16)	6.31	4.94	5.81	5.50	22.56
		2 (n = 10)	6.50	4.30	4.80	5.30	20.90
		3 (n = 15)	7.00	4.93	4.60	6.87	23.40

*Subtests on which open concept students scored significantly higher than trad. students.
**Subtests on which boys scored significantly higher than girls.
***Subtests on which grade students scored the highest, grade two students scored lower, and grade one students scored the lowest.

Open-concept school students exhibited more positive global self-concepts than traditional school students on two of the four subtests, school and family self-concepts, as well as on the total test scores. Boys' self-concept scores were higher than girls' scores on two of the subtests, peer and school self-concepts. On the family subtest, grade two students had the lowest scores, grade one students had higher scores and grade three students had the highest scores. Significant interactions were present on three of the four subtests, but not on the total test scores.

DISCUSSION

Some of the findings of this study were consistent with previous research findings and some were not. Of the previous achievement comparisons, Killough's study (1971) showed significant results in favor of open students while Burnham's studies (1971, 1972) did not. The lack of significant differences in this study between the first grade groups is consistent with Burnham's findings, but the differences found in favor of the traditional students at the second and third grade levels are in direct opposition to Killough's findings.

Of the previous attitude toward school comparisons, both studies (Wilson, Langevin and Stuckey, 1972; Tuckman, Cochran & Travers, 1973) found that open students had more positive attitudes toward school than traditional students. While the findings on two of the subtests on this study's measure were consistent with the previous studies, no significant differences were found on the rest of the measure.

While no studies were found which specifically measured academic self-concept, several compared the global self-concepts of open and traditional students. Heimgartner (1972) and Tuckman, Cochran & Travers (1973) found significant differences in favor of open children, while Ruedi and West (1973) and Kohler (1973) found little or no differences in their studies. The findings of this study, favoring the open students, are in agreement with the first two studies.

The reader is cautioned to consider the weaknesses of this study when interpreting the findings. Since no

previous test scores on information were available as to the comparability of the research groups, the internal validity of the study was threatened by the possibility of initial group differences. The researcher tried to control for this by choosing research schools which were comparable with regard to building enrollment, age, racial composition and socioeconomic area and by selecting a large sample of subjects. The external validity of the study was threatened by the subjects' knowledge that they were part of a study and by the artificiality of the testing situation. This was particularly true for the open concept students who had little or no previous experience in a group testing setting. In addition, the reader is cautioned not to infer a strong cause-effect relationship between the type of school and the test results.

CONCLUSIONS

The first variable of interest in this study was achievement. Some of the second and third grade findings showed that traditional school students achieved higher levels of basic skills than open-concept school students, thereby lending some evidence in support of the first research hypothesis. On several of the second and third grade subtests, however, no significant differences were found; and the first grade findings clearly showed no significant differences between traditional and open concept students. Due to the lack of strong, consistent evidence on the achievement variable, the researcher could not reject the first null hypothesis: "There is no significant difference between the basic skills' achievement level of primary grade open-concept school students and primary grade traditional self-contained classroom students."

The second variable of interest in this study was attitude toward school. The significant findings in favor of the open-concept school students on two of the five subtests of this instrument lend some evidence in support of the second research hypothesis. However, the total test scores and the other three subtest scores showed no significant differences between the groups. Again due to the lack of strong, consistent evidence on the attitude toward school variable, the researcher could not reject the second null hypothesis: "There is no significant difference between the attitude toward school of primary grade open concept school students and primary grade traditional self-contained classroom students."

The third variable of interest in this study was academic self-concept. While the findings on the school subtest of the global self-concept measure showed significance in favor of the open-concept school students, the findings on the academic self-concept measure did not. No significant differences were found between research groups on either the total scores or on the subtest scores. Since the evidence was conflicting, the third null hypothesis could not be rejected: "There is no significant difference between the academic self-concept of primary grade open-concept school students and primary grade traditional self-contained classroom attitudes."

The fourth variable of interest in this study was global self-concept. Since the total test scores and two of the four subtest scores on this measure were significantly higher for the open-concept school students than for the traditional students, the evidence was strong and consistent. The fourth null hypothesis was rejected and the evidence was offered in support of the fourth research hypothesis: "Primary open concept school students will have a more positive global self-concept than primary traditional self-contained classroom students."

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